

## **Introduction**

Shoshone County initiated a contract to develop a wildland–urban interface fire mitigation plan to aid in the protection of the communities within the County. The management of Federal lands has declined over the past twenty years and the forest has continued to grow, becoming dense and overcrowded which increases the fuel loading and the risk of a severe fire. Shoshone County is over 87 percent forested and 75 percent of these lands are Federally managed. This Plan will provide the basis to identify the risk areas within the county and the fire mitigation treatments to reduce the risk to communities. The Plan will address these goals and objectives:

### **Goal:**

To reduce the rate of spread and acres of land burned by forest fires through the implementation of targeted fuel mitigation treatments where the landscape has the potential to sustain fires that threaten communities in the rural-urban interface.

### **Objectives:**

To meet this goal, the following objectives will be evaluated and implemented.

- Identify high risk areas for fire ignition
- Locate landscape features with a high risk for rapid fire spread
- Search out significant concentrations of home sites and other buildings
- Determine areas where initial efforts should be concentrated
- Develop risk reduction activities

The Shoshone County Fire Mitigation Plan has been instituted by the County of Shoshone with funding provided by the USDA Forest Service and the Federal Emergency Management Agency (FEMA) of the US Government. Northwest Management, Inc., is a professional forestry-consulting firm located in Moscow, Idaho,

that was selected by the county-based committee to evaluate the wildland fire situation in the county and develop mitigation projects for meeting the goal stated above. The contract award was made in April 2002, with a targeted completion date of October 1, 2002. This report is the final report summarizing the accomplishments and results.

## **Background on Shoshone County**

Shoshone County is located in the Idaho Panhandle and encompasses a total area of approximately 2,178,738 acres (881,675 ha). The elevation of the county ranges from a low of 2,126 feet above sea level at the western boundary of the county on the St. Joe River to a high of 7,664 feet above sea level at Illinois Peak along the Idaho/Montana Border.

The ownership of the county is dominated by federal government ownership (see Appendix V for a graphical representation):

• US Forest Service	1,538,895 ac	70.66%
• BLM	84,521 ac	3.89%
• State of Idaho	79,541 ac	3.65%
• Private Lands	473,786 ac	21.75%
• Open Water	1,137 ac	< 0.00%

Three major river drainages dominate the landscape of the county; St. Maries River and the St. Joe River in the south, and multiple forks of the Coeur d'Alene River draining areas from the north end of the county.

Shoshone County's terrain is highly irregular and dominated by forest vegetation in all ages of development. Land cover classification of Shoshone County reveals that forested uplands dominate the landscape, covering approximately 87% of the county.

• Urban or Developed	6,027 ac	< 1%
• Agricultural	78 ac	< 1%
• Non-Forested	213,035 ac	9.8%
• Forest Uplands	1,888,941 ac	86.7%
• Water	721 ac	< 1%
• Riparian & Uplands	38,923 ac	1.8%
• Barren	30,973 ac	1.4%
• Snow & Ice	38 ac	< 1%

Shoshone County suffered the brunt of the historic 1910 fires resulting in many communities being burnt, including a portion of Wallace (Pyne 2001). The scars of that fire are still evident across the landscape of Shoshone County as some previously forested regions still do not support forest trees and shrubs, especially along the southern facing slopes, while other areas have a mosaic of regeneration of different size classes. Other areas have begun to support trees due to aggressive reforestation programs that were initiated two decades ago and have made significant headway on these previously barren sites.

Subsequent fires have spotted the landscape of the county. During the 15 year period from 1983–1998 there have been approximately 400 fires in the county (averaging 26 per year). Only one fire reached the size of 1,438 acres during this period, with over 98% of the fires in the county being contained below 10 acres (IDL 2001). However, the scenic beauty of the county has increased its attraction as a destination vacation point. This fact, coupled with the number of homes located in the rural–urban interface, the incidents of human caused fires, and the maturing forestlands of the county place the region at increased risk to both wildfire spread and the potential for loss of homes and property.

## Community Clusters

Shoshone County had a population of 13,771 people as of the census of 2000, down from a 13,931 population in 1990 (-1.1% annual rate of growth). Although there are 29

identified "places" in Shoshone County, only 16 of these places can be considered a "community" (more than 50 people living in the area).

For the purposes of this analysis and assessment, the 16 communities identified by largest population were selected as target communities. Around these communities, a three-mile-radius circular zone was created to represent the area of initial concern for controlling wildfire hazard. These zones overlapped where target communities were within 3 miles of each other, creating irregular circle boundaries.

The creation of these zones is consistent with the philosophy of protecting communities, not specifically individual homes. While our recommendations for management are concentrated on what is applicable and prudent in these community zones, they can easily be adapted for use in smaller communities and for protecting individual home sites.

## **Community Input**

In order for fire mitigation efforts to be successful there needs to be a commitment by the citizens of the community to become proactive in managing their property in a way that facilitates fire fighting activities while reducing the risk that it will burn. While it is critical that the entire landscape be evaluated for fire risks, individual home site preparation can make the difference between a saved home and a lost one.

In order to assess the risks associated with homes in the county, a citizen survey was developed for homeowners in the rural–urban interface of Shoshone County. This survey (Appendix I), allowed the evaluation team the ability to determine some key factors of risk associated with roof materials, concentrations of trees and vegetation surrounding homes, access by fire fighting equipment and personnel in the event of a fire, their familiarity with fire fighting issues, access to water and tools, as well as other data.

## **Survey Results**

The Shoshone County Assessor provided the assessment team with the names and addresses of rural landowners in Shoshone County that owned at least 10 acres, had a home on the property, and were not in the limits of any city. There were a total of 123 identified families for this survey. A cover letter, survey, return envelope, and an offer of a free GIS map for respondents was mailed on August 3, 2002. A postcard reminder was sent to non-respondents on August 13, 2002. Another survey, return envelope, and free offer for a GIS map was sent on August 21, 2002, to non-respondents.

A total of 90 residents responded to and completed the survey, 3 of the names were removed from the list for various reasons. The final response rate is calculated at 75%. The evaluation team feels that this represents an excellent sampling of the rural home and property owners in the county.

The respondents to the survey owned a total of 7,290 acres and lived on the property. The average respondent owns 82 acres with the largest owning over 2,100 acres. Out of this, the average respondent indicated that 42 acres of their property are forested, representing approximately 3,745 acres of forestlands in the rural-urban interface of Shoshone County.

Survey participants indicated the roofing material covering their homes. Approximately 29% of the roofs were covered with a composite material, 62% with metal, 3% with wooden shake, and 6% with some other material. Based on these numbers, only the owners with a wooden shake material covering their homes would be at high risk in this category; a low percent of the total.

Respondents also assessed the number of trees near their homes. Roughly 60% of the homeowners indicated that there are more than 25 trees within 250 feet of their homes. Just over one-fifth (21%) indicated that there were between 10 and 25 trees in this zone. About 13% indicated that there are less than 10 trees, while only 7% indicated that there are no trees within 250 feet of their homes. When asked to narrow this buffer to 75 feet around their homes, 16% of the respondents indicated there are more than 25 trees, 35% had between 10 and 25 trees, 40% had fewer than 10 trees, and 9% had no

trees. Because a dense forest can carry a forest fire in the crowns of trees, the number of trees close to home sites is a concern to fire managers in the rural-urban interface. The highest risk landowners in this category are those with more than 25 trees within 75 feet of home sites. We estimate that approximately 16% of the rural landowners in the county are in this highest risk category, with 35% more possibly at risk from an excessive number of trees close to homes. These sites should be evaluated individually to determine if these trees are accompanied by flammable shrubs, grasses, and forbs, and whether a continuous forest tree layer exists to threaten homes.

Approximately 86% of the rural homeowners indicated that they maintain a lawn around their homes. The majority of these homeowners indicated that they keep that lawn green all summer and fall. This is a positive factor in assessing the ability of a ground fire to be carried in the grasses and forbs.

The average rural homeowner in Shoshone County has a driveway in excess of 1,350 feet. The longest driveway reported in the survey was 8.5 miles. The respondents to this survey represent a total of 32.3 miles of driveways. Approximately 67% of the respondents with a driveway over one-half a mile indicated that their driveway has turnouts that would allow two vehicles to pass each other. This is a rather positive indication for the county in general. However, approximately one-third of the rural homeowners with driveways over half-mile do not possess turnouts. This may become a factor in the event of an emergency and evacuation for these residents. These rural homeowners without turnouts are encouraged to assess their specific situations to determine if these structures can be added to their home access.

Rural homeowners in Shoshone County are extremely well prepared for structure and wildfire firefighting response as indicated by these surveys. Approximately 97% of the homeowners have hand tools that could be used to fight a wildfire that threatens their homes. Portable water tanks are owned by 16% of the respondents, 30% have stationery water tanks, 19% have a pond with a pump, 28% have a pond with no pump, and 42% indicated that they have some other type of equipment that could be used such as tractors, skidders, and other equipment.

Almost one-third (31%) of the respondents indicated that someone living in the household has received wildland fire fighting training, while in 21% of the homes someone had received structure fire fighting training. Out of these families, 11% had received both types of training. This is also an excellent factor in determining the preparedness of the county's residents to fight wildfire in the rural-urban interface. However, these number also indicate that the majority of homes in the rural areas do not have any training in fire fighting as 60% of these homes indicated that they have neither type of training.

Approximately 69% of the respondents to this survey indicated that they conduct some sort of fuels reduction program around their home periodically such as grass or brush burning. Above all other factors, this one provides a good insight to the attention and awareness rural homeowners in the county have for wildfire issues. This is a positive factor to reducing the risk of casualty loss.

Near the end of the survey, respondents were asked to rate their home site's defensibility in the case of a wildfire that threatens their home and adjacent buildings. The highest rating (excellent) was claimed by 11% of the respondents, 34% rated their home site as good, 44% as Acceptable, 6% as poor, and only 4% as unacceptable. The categories were further defined in the following ways: Excellent—very defensible, Good—some minor risks, Acceptable—if we had time, we could save it, Poor— many risks, even with time is would be difficult to save, and Inadequate—multiple ways for fire to spread across the landscape and burn our home or adjacent buildings in a short time.

Finally, approximately 70% of the respondents indicated that members of the household would be interested in attending a free, or low cost, one-day training seminar designed to teach homeowners in the rural–urban interface how to improve the defensible space surrounding their home and adjacent outbuildings. Approximately 38% of the respondents indicated that they would be interested in participating in a cost-share program for wildfire risk reduction. We recommend that Shoshone County host training sessions of this nature as part of an integrated wildland fire risk reduction program.